CLAIMS

What is claimed is:

1. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα;

b) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα; and

c) a complement of an isolated nucleic acid molecule of a) or b).

2. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds to hTNFα; and

b) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds to hTNFα.

3. An isolated nucleic acid molecule selected from the group consisting of:

a) ~~an isolated nucleic acid molecule which, when expressed with a~~ molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds to hTNFα, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4;

b) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds to hTNFα, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2; and

c) a complement of an isolated nucleic acid molecule of a) or b).

4. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of SEQ ID NO: 5 and a gene encoding an IgG1 immunoglobulin constant

region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 3, or a fragment thereof, which binds hTNFα;

b) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of SEQ ID NO: 3 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 5, or a fragment thereof, which binds hTNFα; and

c) a complement of the isolated nucleic acid molecule of a) or b).

5. An isolated nucleic acid molecule comprising a sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) the complementary strand of SEQ ID NO: 2;

c) DNA sequences that hybridize under conditions of high stringency to the complementary sequence of SEQ ID NO: 2 , and which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds hTNFα; and

d) RNA sequences transcribed from the sequences of a), b), or c).

6. An isolated nucleic acid molecule comprising a sequence selected from the group consisting of:

a) SEQ ID NO: 4;

b) the complementary strand of SEQ ID NO: 4;

c) DNA sequences that hybridize under conditions of high stringency to the complementary sequence of SEQ ID NO: 4 , and which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds hTNFα; and

d) RNA sequences transcribed from the sequences of a), b), or c).

7. An expression vector comprising the nucleic acid molecule according to Claim 1.

8. An expression vector comprising the nucleic acid molecule according to Claim 2.

~~9. An expression vector comprising the nucleic acid molecule according to Claim 3.~~

10. An expression vector comprising the nucleic acid molecule according to Claim 4.

11. An expression vector comprising the nucleic acid molecule according to Claim 5.

12. An expression vector comprising the nucleic acid molecule according to Claim 6.

13. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα;

b) an isolated nucleic acid molecule which hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα; and

c) a complement of an isolated nucleic acid molecule of a) or b).

14. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which hybridizes to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα;

b) an isolated nucleic acid molecule which hybridizes to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS, and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα; and

c) a complement of an isolated nucleic acid molecule of a) or b).

15. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα, wherein said nucleic acid molecule hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4 under wash conditions of wash solution of 42° C 0.2x SSC/0.1% SDS and incubation with rotation for 15 minutes at 42° C;

b) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα, wherein said nucleic acid molecule hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2 under wash conditions of wash solution of 42° C 0.2x SSC/0.1% SDS and incubation with rotation for 15 minutes at 42° C; and

c) a complement of an isolated nucleic acid molecule of a) or b).

16. An isolated nucleic acid molecule comprising a DNA sequence that hybridizes to the complementary sequence of SEQ ID NO: 2 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, said molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encoding a polypeptide which binds hTNFα, or an RNA sequence transcribed from the DNA sequence.

17. An isolated nucleic acid molecule comprising a DNA sequence that hybridizes to the complementary sequence of SEQ ID NO: 4 under wash conditions of

wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, said molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encoding a polypeptide which binds hTNFα, or an RNA sequence transcribed from the DNA sequence.

18. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which hybridizes under conditions of ~~high stringency to a nucleic acid molecule having the complementary~~ sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα;

b) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα; and

c) a complement of an isolated nucleic acid molecule of a) or b).

19. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ

ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα; and

b) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα.

20. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4;

b) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2; and

c) a complement of an isolated nucleic acid molecule of a) or b).

21. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of

SEQ ID NO: 5 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 3, or a fragment thereof, which binds and inhibits hTNFα;

b) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of SEQ ID NO: 3 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 5, or a fragment thereof, which binds and inhibits hTNFα; and

c) a complement of the isolated nucleic acid molecule of a) or b).

22. An isolated nucleic acid molecule comprising a sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) the complementary strand of SEQ ID NO: 2;

c) DNA sequences that hybridize under conditions of high stringency to the complementary sequence of SEQ ID NO: 2, and which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds and inhibits hTNFα; and

d) RNA sequences transcribed from the sequences of a), b) or c).

23. An isolated nucleic acid molecule comprising a sequence selected from the group consisting of:

a) SEQ ID NO: 4;

b) the complementary strand of SEQ ID NO: 4;

c) DNA sequences that hybridize under conditions of high stringency to the complementary sequence of SEQ ID NO: 4, and which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene

encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds and inhibits hTNFα; and

d) RNA sequences transcribed from the sequences of a), b) or c).